

REMARKS

Claims 2 -3, 5, 14 - 24, 26 - 29, 38 - 48, 51 - 52, 54, 63 - 73, 75 - 76, 78, and 87 - 97 have been withdrawn as directed towards multiple non-elected species. Accordingly, claims 1, 4, 6 - 13, 25, 30 - 37, 49 - 50, 53, 55 - 62, 74, 77 and 79 - 86 have been examined in the application.

I. Request for Removal of EP 956 954 as Prior Art

Concurrent to this amendment paper, Applicant herewith submits certified copies of priority documents 1999-290165, 2000-028498 and 2000-269995. It is respectfully presented that priority document 1999-290165 possesses a filing date of October 12, 1999, which antedates November 17, 1999, the date on which EP 956 964 ("Kanaya") was published. Because at least the following subject matter (as claimed in independent claims 1, 25, 49, 50 and 74) was disclosed in priority document 1999-290165, it is respectfully requested the Kanaya be removed as a prior art reference.

Claim 1 of priority document 1999-290165 discloses: (1) ink reservation obtaining means for obtaining an ink reservation amount in the ink reservoir; (2) temperature change amount obtaining means for obtaining a temperature change amount for the recording head; and (3) driving signal correction means for correcting the driving signal based on the temperature change amount and the ink reservation amount. Additionally, at least paragraphs [0061], [0064] and [0078] of priority document 1999-290165 disclose the temperature change amount of the recording head being a temperature change amount per unit of time; at least paragraph [0063] discloses that the estimation of the current ink temperature is derived from the temperature change amount and the ink reservation amount; and at least paragraph [0078] and [0079] disclose

ink consumption amount controlling means for controlling the ink consumption amount based on the ink reservation amount as a function of the temperature change amount per unit of time.

II. Claim Rejection - 35 U.S.C. § 102(e)

Claims 1, 4, 6, 12 - 13, 25, 30, 35 - 37, 49 - 50, 53, 55, 60 - 62, 74, 77, 79 and 84 - 86 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by EP 956 964 (“Kanaya”). For the following reasons, this rejection is respectfully traversed.

Independent Claims

As a threshold issue, Applicant’s priority document antedates the data of publication of the Kanaya reference, eliminating the Kanaya reference as prior art (as previously discussed). However, assuming *arguendo* that the Kanaya reference was valid, or, further assuming that the Examiner possessed additional references to apply against the instant invention, the prior art would continue to be deficient as noted below.

Independent claims 1, 25, 49, 50 and 74 recite (among other things), ink consumption being based upon an ink reservation amount, wherein the ink reservation amount acts as a function of the temperature change amount per unit of time. At least these features, in combination with the other limitations of independent claims 1, 25, 49, 50 and 74, are not taught or suggested by the prior art and/or the prior art relied upon in the grounds of rejection.

The grounds of rejection compare Kanaya’s calculation of the weight of ink droplets to the ink consumption control as disclosed in claims 1, 25, 49, 50 and 74. However, in Kanaya,

temperature or ink quantity information is limited in use to that of determining the weight of ink droplets so as to determine when the ink supply should be replaced.

In comparison, the instant invention's claims 1, 25, 49, 50 and 74 require ink control based upon an ink reservation amount as a function of temperature change amount per unit of time. Non-limiting advantages of illustrative, non-limiting embodiments of these limitations become clear when one reads pages 25 - 27 of the instant specification. More particularly, line 21 of page 26 recites that “[i]t is noted that the temperature changing speed of ink is slower than that of environmental temperature due to the difference of the heat capacity.” Additionally, line 6 of page 27 recites that the “[d]egree of ink temperature change relative to environmental temperature differs depending on the ink reservation amount.”

Thus in requiring ink control based upon an ink reservation amount as a function of temperature change amount per unit of time, the non-limiting embodiments of the instant invention are better able to more accurately control ink ejection through an analysis of the interaction between expected ink temperature change relative to how the ink temperature change varies according to differences in the quantity of ink remaining. For these reasons, Applicants respectfully assert that claims 1, 25, 49, 50 and 74 recite features that are altogether missing in Kanaya and/or the prior art, and therefore the Examiner is respectfully requested to reconsider and withdraw this anticipation rejection.

Dependent Claims

As to dependent claims 4, 6, 12 - 13, 30, 35 - 37, 53, 55, 60 - 62, 77, 79 and 84 - 86, such claims are patentable at least by virtue of their dependencies.

III. Claim Rejection - 35 U.S.C. § 103(a)

Claims 7 - 11, 31 - 34, 56 - 59 and 80 - 83 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kanaya in view of Takayanagi (JP 05-050590) and Murray (U.S.P. No. 6,290,321). For the following reasons, this rejection is respectfully traversed.

As to these claims and analogous to the analysis in Part I, *infra*, Kanaya fails to be prior art because Applicant's priority document 1999-290165 antedates the publication of Kanaya. Additionally, assuming that the Kanaya reference was somehow valid, Kanaya continues to be deficient by not teaching or suggesting ink control based upon an ink reservation amount as a function of temperature change amount per unit of time. Moreover, Takayanaig and Murray fail to cure these deficiencies. Accordingly, claims 7 - 11, 31 - 34, 56 - 59 and 80 - 83 are respectfully asserted as being patentable.

IV. Conclusion

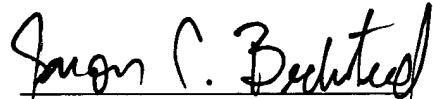
For the reasons discussed above, Applicants respectfully assert that claims 1, 4, 6 - 13, 25, 30 - 37, 49 - 50, 53, 55 - 62, 74, 77 and 79 - 86 are patentable. In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/686,959

Attorney Docket No.: Q61232

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Jason C. Beckstead
Registration No. 48,232

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE



23373

PATENT TRADEMARK OFFICE

Date: April 2, 2003